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ABSTRACT

Changes in the self-concept and career orientation of 10,759 members of a nationally representative sample of high school graduates was studied over 7 years. Objectives were to determine: (1) the degree to which changes in adolescents' self-concept and career attitudes were related to their level of involvement in postsecondary education; and (2) if there were any sex differences. Data were obtained from the National Longitudinal Study of the High School Class of 1972 concerning graduates' sex, family socioeconomic status in 1972, postsecondary educational attainment level, self-concept, and career orientation. Respondents indicated the relative importance of 10 life goals and their agreement with eight self-concept statements. Principal component analysis identified three factors that were consistent over time: self-image, self-confidence, and career orientation. Exposure to college seemed to have a stronger relationship to the development of a more positive self-image, a modest relationship to enhancing self-confidence, and a differential relationship to career orientation for females and males. Collegiate experience had essentially no relationship to the career orientation development of males, while it had a pronounced relationship to the formation of females' career orientation over the 7-year period. (SW)

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Self-Concept and Career Orientation Developmental Patterns During the College Years

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Running head: SELF-CONCEPT AND CAREER ORIENTATION

Abstract

The findings of this longitudinal study of changes in the self-concept and career orientation of 10,759 members of a nationally representative sample of high school graduates indicate that the level of postsecondary educational attainment over a seven-year period is related to the development of a more positive self-concept and the maintenance of a healthy career orientation. The findings further indicate, however, that participation in the collegiate experience has a differential relationship to changes in the career orientation of females and males. The policy and research implications of these findings are presented.

Self-Concept and Career Orientation Developmental Patterns During the College Years

The goals of American higher education are "directed toward the growth of the whole person through the cultivation not only of the intellect and of practical competence but also of the affective dispositions, including the moral, religious, emotional, social, and esthetic aspects of the personality" (Bowen, 1977, p. 33). The cultivation of students' self-concept and their attitudes toward the workplace are commonly accepted goals of most of the nation's colleges and universities and represent established areas of inquiry for over five decades of research on the "effects" of postsecondary education. Exhaustive critiques of this massive literature tend to support the general conclusion that involvement in postsecondary education is related to the development of a more positive self-concept and to the decreasing importance of economic and status considerations associated with the adult world of work (see, for example, Corey, 1936; Strang, 1937; Wise, 1958; Bloom & Webster, 1960; Boyer & Michael, 1965; Feldman & Newcomb, 1969; Bowen, 1977). These general findings were confirmed in Astin's (1977) recent study of the developmental patterns of over 200,000 college students.

The extent to which these self-concept and career attitude developmental trends of college students is equally applicable for males and females is less certain and remains an open question. Bowen (1977), for example, concluded that the

collegiate experience "produces some convergence of interests and attitudes between men and women and thus narrows personality differences between the sexes," (p. 134) while Astin (1977) found that many differences in the personalities of males and females "persist during the four years following matriculation" (p. 215). Potential differences in the developmental patterns of male and female students have acquired increased importance in recent years since women outnumbered men as first-time freshmen in 1978 (Astin, King, & Richardson. 1978).

While there is abundant indirect evidence to support the contention that the collegiate experience contributes to the cognitive and affective development of students, decadal reviews of the voluminous research literature consistently caution that the collective findings are inconclusive due to several common methodological deficiencies (Corey, 1936; Wise, 1958; Feldman & Newcomb 1969; Bowen, 1977). Among the more serious deficiencies are the tendencies of studies to rely on cross-sectional research designs, to fail to control for salient pre-college student characteristics, and to lack a control sample of individuals who have exposure to the collegiate experience. Each deficiency has serious consequences for the confidence that may be placed in extant findings. For example, the use of cross-sectional designs confound group differences with individual changes; failure to control the salient pre-college characteristics in studies of college graduates and non-graduates precludes the opportunity to

investigate whether observed differences between these groups are more than a simple manifestation of initial differences preceding the college years; and the lack of a control sample of individuals with no exposure to the collegiate setting precludes the accumulation of direct evidence that developmental changes observed between the freshman and senior years are more than a reflection of normal maturation during adolescence.

An additional constraint of most "student growth studies" is their rather short temporal framework in which changes in student developmental patterns are examined in a single year or between the freshman and senior years (Terenzini, Theophilides, & Lorang, 1984). This constraint precludes investigations to the degree of permanence in student developmental patterns and the extent to which the "effects" of the collegiate experience are enduring when students enter the adult work world.

This paper presents the findings of a longitudinal analysis of changes in the self-concept and career attitudes of a nationally representative sample of high school graduates in 1972. The primary purposes of the study were to determine (1) the degree to which changes in adolescents' self-concept and career attitudes were related to their level of involvement in postsecondary education, and (2) the extent to which these relationships were consistent for males and females. It is believed that the longitudinal character of the study based on the responses of a nationally representative sample of high

school graduates, many of whom had no involvement in postsecondary education, constitutes a more rigorous assessment of the "effects" of the collegiate experience than is presently available in the research literature.

Research Procedures

Sample

The sample for this study was obtained from participants in the National Longitudinal Study (NLS) of the High School Class of 1972. The NLS was a two-stage stratified national probability sample of seniors from 1,318 public and private high schools and was designed to provide information on the personal, educational, and vocational development of adolescents during their transition from high school to the adult world. Students were surveyed initially in their senior year of high school (1972) and subsequently in 1973, 1974, 1976, and 1979. This study was based on the responses of 10,759 NLS participants with complete data on all variables described below. A complete description of the five NLS questionnaires, sampling design, and response rates is provided by Riccobono, Henderson, Burkheimer, Place, and Levinsohn (1981).

Variables

Data were obtained for all members of the sample on the following measures: sex, family socioeconomic status in 1972, postsecondary educational attainment level, self-concept, and

career orientation. The three initial measures were obtained directly from the NLS data set. Sex was reported directly by each respondent. Family socioeconomic status and postsecondary educational attainment level were composite variables obtained directly from the NLS data set (see Riccobono et al., 1981). Family socioeconomic status in 1972 "was derived from an equally weighted linear composite of father's education, mother's education, father's occupation, family income, and the household items" from the first follow-up and/or base-year student questionnaire (Riccobono et al., 1981, p. K-4). Postsecondary educational attainment level was a composite variable derived from participants' responses to questions on each survey concerning their postsecondary enrollment status in each of the seven years following high school graduation. This variable was recoded to a scale ranging from one to four with the following values: (1) none, (2) less than two years, (3) more than two years but no baccalaureate, and (4) four or more years with receipt of a baccalaureate.

Two sets of items were included in each of the five NLS surveys. The first asked respondents to indicate the relative importance of ten life goals (e.g., being successful in my line of work, being a leader in my community); the second asked respondents to indicate their relative agreement with eight self-concept statements (e.g., I take a positive attitude toward myself, good luck is more important than hard work for success).

A principal components analysis with orthogonal rotation was applied to each set of items in the base-year (1972) survey in order to determine the composition of the scales to be used as measures of self-concept and career orientation. Prior to this analysis, all items were coded or recoded such that a higher value represented a more positive response. The life goal items had a scale ranging from one to three, and the scale of the self-concept items ranged from one to five (with a value of three representing "no opinion").

The result of the principal component analysis of the self-concept items was the extraction of two factors, one representing self-image and the other self-confidence. Three factors were extracted from the analysis of the life goal items. They were identified as representing career, community, and family orientation.

In order to determine the consistency of the factor structure over time, the same analysis was applied to the corresponding items in the final (1979) NLS survey. The community and family orientation factor were found to be inconsistent over time and were deleted from the study. The self-image, self-confidence, and career orientation factors were found to be consistent over time and were retained in the study. Scores on these three variables were then constructed by computing the average value of the responses to the principal items loading on each factor respectively. Table 1 presents the

characteristics of individuals obtaining high scores on each of these variable.

Insert Table 1 about here

Analyses

A 2 x 4 x 5 repeated measures multivariate analysis of covariance (MANCOVA) design was used to analyze the data. The independent variables were sex (males, females), postsecondary educational attainment as of 1979 (none, less than two years, greater than two years but no baccalaureate, four or more years with receipt of baccalaureate), and time, the repeated measure (1972, 1973, 1974, 1976, 1979). The covariate was the respondents' family socioeconomic status in 1972. The dependent variables were the self-image, self-confidence, and career orientation scale scores for each of the five points in time in the repeated measures design.

Results

The MANCOVA results and the adjusted means for males and females by postsecondary educational attainment levels over the five time intervals are presented in Tables 2 and 3 respectively. The adjusted mean scores for the dependent variables in Table 3 are the scores that would be expected or predicted for each group if the covariate mean for the group was the same as the grand mean for the covariate (Huitema, 1980).

The MANCOVA results (see Table 2) indicated statistically significant ($p < .001$) differences for all main effect and interaction terms. Given the previously stated purposes of this study, interpretation of these results will be restricted to differences over time (time main effect) on the three dependent variables and how this general maturation effect varies in relation to respondents' postsecondary educational attainment level (time by postsecondary educational attainment interaction) and sex (time by postsecondary educational attainment by sex interaction). Each dependent variable will be discussed separately with interpretations based upon univariate F-ratios where significant multivariate effects were found. Only differences at the .001 confidence level will be considered given the large sample size.

The univariate F-ratios of all three dependent variables were statistically significant ($\underline{df} = 4/43004$, $p < .001$) in the MANCOVA test of the time main effect (self-image, $F = 1142.21$; self-confidence, $F = 223.66$; career orientation, $F = 206.55$). These results indicated that scores on the three dependent variables changed significantly over time when variation associated with the covariate (family socioeconomic status) was statistically removed.

Insert Tables 2 and 3 about here

Self-image. There was a consistent increase in the self-image score for all respondents over the seven-year period. The adjusted mean self-image score increased progressively from 3.94 in 1972 to 4.30 in 1979 (see Table 3). The rate of increase was greatest between 1972 and 1973, and slowed progressively through 1979. This general maturation pattern, however, was not consistent for those with different levels of postsecondary educational attainment as evidenced by a significant univariate F-ratio of 7.23 (df = 12/43004, $p < .001$) for the interaction between time and postsecondary educational attainment on this variable. This interaction is plotted in Figure 1 and indicates a greater rate of increase in self-image between 1974 and 1979 for respondents with higher levels of postsecondary educational attainment. This trend is especially evident for baccalaureate recipients.

Insert Figure 1 about here

Self-confidence. There was an overall increase in the self-confidence scores for all respondents between 1972 ($\bar{X}$ = 3.80) and 1979 ($\bar{X}$ = 3.97), but the increase was not consistent across the seven-year period. The greatest increase in self-confidence scores occurred in two time intervals, 1972-73 and 1974-76 (see Table 3). As before, however, this general maturation pattern was not consistent for those with different levels of

postsecondary educational attainment. The univariate F-ratio for this variable in the significant multivariate interaction between time and postsecondary educational attainment was 9.58 (df = 12/43004, $p < .001$). This interaction, plotted in Figure 2, shows an atypical pattern for respondents with no involvement in postsecondary education. This atypical pattern is especially evidence between 1972-73 when their rate of increase in self-confidence scores exceeds all groups and between 1976-79 when their rate of increase is the lowest of all groups.

Insert Figure 2 about here

Career orientation. There was an overall reduction in the career orientation scores of respondents between 1972 ($\bar{X} = 2.51$) and 1979 ($\bar{X} = 2.44$). This decrease occurred almost entirely in the first year following high school graduation, with scores remaining essentially constant thereafter (see Table 3: Time Main Effect). This general maturation pattern, however, masks wide variation both by sex and level of postsecondary educational attainment as evidenced by a significant three-way interaction on this measure ($F = 12.23$, df = 12/43004, $p < .001$). Inspection of this interaction plotted in Figure 3 indicates that postsecondary educational attainment has a decidedly different relationship to the career orientation scores of males and females. For females, there is a strong positive relationship, especially during

1974-79, between the level of postsecondary educational attainment and career orientation scores; for males, postsecondary educational attainment appears to be essentially unrelated to career orientation, except between 1973-74 when the scores of those in the highest attainment group decrease substantially.

Insert Figure 3 about here

Discussion

While the findings of the present study are generally consistent with those reported in previous assessments of the "effects" of colleges on students (see, for example, Astin, 1977; Gaff, 1973; Pace, 1974; Spaeth & Greeley, 1970), they are perhaps more robust due to several features incorporated in the research design to attend to deficiencies noted in previous studies (Feldman & Newcomb, 1969; Pascarella, in press; Terenzini, Theophilides, & Lorang, 1984). Included among these methodological improvements are the inclusion of a group of individuals with no exposure to the collegiate experience, controls for pre-college characteristics through the use of a covariate and a repeated measures design, and an extended seven-year longitudinal framework.

The general self-image maturation pattern for all respondents indicated a consistent increase (i.e., more positive) over the seven year period following high school graduation, and the relative position of those with varying levels of exposure to the collegiate experience remained constant at each time interval (see Figure 1). That is, those respondents with higher levels of involvement in postsecondary education had a more positive self-image at each of the five time intervals. However, differences between the groups were greater in 1979 than initially in 1972, suggesting that exposure to the collegiate experience tended to reinforce and increase the more positive self-image held initially by college-bound youth. This finding was especially true for baccalaureate recipients. The positive self-image of those with greater exposure to collegiate settings increased at a greater rate than those with little or no involvement in postsecondary education after an initial narrowing of group differences immediately following high school graduation (i.e., 1972 to 1974).

The general self-confidence maturation pattern for all respondents showed a modest increase over the seven year period following high school graduation, and the relative position of those groups with varying levels of exposure to the collegiate experience again remained constant at each time interval (see Figure 2). Unlike the self-image scores, however, differences between groups with varying levels of postsecondary education

involvement tended to be greater in 1972 than in 1979. These contrasting findings suggest that the collegiate experience has a more decided "influence" on adolescents' self-image than on their self-confidence. Stated another way, the initial level of adolescents' self-confidence appears to have a stronger relationship to the basic decision of whether to enroll in postsecondary education, whereas the development of a more positive self-image appears to be a more decided "outcome" of prolonged involvement in the collegiate setting. Nonetheless, following a reduction of group differences immediately following high school graduation (i.e., 1972 to 1974), those with greater involvement in postsecondary education tended to develop higher levels of self-confidence than those with little or no exposure to the collegiate experience. This pattern of accelerating self-confidence scores again is most pronounced for baccalaureate recipients.

The general career orientation maturation pattern for all respondents indicated a progressive decrease for approximately five years following high school graduation, with a modest rebound during the latter adolescent years. The overall patterns of males and females are slightly different with males showing a recovery in career orientation scores slightly earlier (i.e., 1974 vs. 1976) than females (i.e., 1976 vs. 1979). But it is in the area of career orientation where exposure to the collegiate experience has a decidedly different "impact" on females and

males (see Figure 3). Such exposure had essentially no relationship to the career orientation development of males, while it had a pronounced relationship to the formation of females' career orientation over the seven year period. Greater levels of exposure to the collegiate experience clearly appears to be related to an increase in females' career orientations, and this increase seems to be in direct proportion to the amount of postsecondary education involvement.

Astin and Kent (1983) contend that colleges and universities have a newfound obligation to provide female students with the competencies necessary for effective job performance if they are to overcome handicaps resulting from their socialization for dependence and conformity (p. 309). The above finding suggests that institutions of higher learning are at least partially fulfilling this obligation through the inculcation of a heightened sense of career orientation among their female students. This orientation would appear to be a natural prerequisite to the subsequent development of essential job-related competencies.

In sum, the relationship between exposure to the collegiate experience and the developmental patterns of adolescents on these three measures is somewhat different. That is, such exposure appears to have a stronger relationship with the development of a more positive self-image, a modest relationship with enhancing self-confidence, and a differential relationship for females and

males in terms of their respective career orientation development. Such findings clearly reflect the complex nature of developmental patterns during the adolescent years.

The findings discussed above have several implications for both practitioners and scholars. For practitioners engaged in policy and funding decisions in institutional, governmental, and political arenas, they give credence to the position of those supportive of postsecondary education by demonstrating that involvement in such institutions is related to the development of individual attributes that are consistent with traditional societal values (i.e., positive self-image, higher self-confidence, stronger career orientation), even when initial socioeconomic status differences are considered. While such "positive outcomes" suggest that institutions of higher learning are worthy of continued societal support, the extent to which such findings can be translated into actual funding decisions obviously remains an open question. Some may judge them to be adequate for continued or increased support, while others may regard them as insufficiently strong to warrant higher funding levels.

For scholars, the findings of this study support the general conclusions of myriad single institution studies over the past decades and thus suggest that a more fruitful line of inquiry would be the exploration of differential "effects" of attendance at various types of colleges and universities. There is now

abundant evidence supporting the general conclusion that postsecondary education contributes to the development of a more positive self-concept and a stronger career orientation of youth. But such general findings may well mask the different "effects" of various types of institutions. Explorations of potential differences in the developmental patterns of research university, comprehensive college, liberal arts college, and proprietary institution graduates would appear to be a logical next step in the refinement of research on college outcomes. A corollary line of inquiry of comparable import is exploration of the relationship between the level of student involvement in various components of the collegiate experience and their developmental patterns. It seems quite possible that the quality of student effort (Astin, 1984; Pace, 1984) in various components of the collegiate setting might be differentially related to unique patterns of growth and development on selected student outcome measures.

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Table 1

Attributes of Individuals with High Scores on the Self-image, Self-confidence, and Career Orientation Scales

Scales	Attributes of individuals with high scores
Self-Image	Individuals with high scores are more inclined to take a positive attitude toward themselves, to feel that they are persons of worth, to feel that they can do things as well as most other people, and, in general, to be satisfied with their lives.
Self-confidence	Individuals with high scores tend to be internally motivated. They consider hard work to be more important to future success than luck, they feel confident in their ability to achieve their life goals, and they prefer to seek improvement rather than accept their current condition in life.
Career orientation	Individuals with high scores place greater emphasis on finding steady employment, being successful in their careers, and being economically affluent.

Table 2

Summary of 2 x 4 x 5 MANCOVA

Source	Degrees of Freedom		F-ratio
	Hypothesis	Error	
Between subjects:			
Postsecondary educational attainment (P)	9	26158	68.78*
Sex (S)	3	10748	345.35*
P x S	9	26158	16.95*
Within subjects:			
Time (T)	12	10740	386.74*
T x P	36	31733	11.22*
T x S	12	10740	8.55*
T x P x S	36	31733	4.50*

*p < .001

Table 3

Adjusted Means for Time, Postsecondary Educational Attainment and Sex Groups on Dependent Variables

Independent variables	Career orientation	Self-image	Self-confidence
Time:			
1972	2.51	3.94	3.80
1973	2.43	4.12	3.88
1974	2.42	4.21	3.89
1976	2.43	4.28	3.96
1979	2.44	4.30	3.97
Sex:			
Males	2.52	4.20	3.84
Females	2.37	4.14	3.96
Postsecondary educational attainment:			
None	2.54	4.16	3.67
< 2 years	2.41	4.12	3.81
2-4 years	2.51	4.20	3.85
4 years +	2.43	4.17	3.97

FIGURE 1

Figure 1. Interaction between Time and Postsecondary Educational Attainment on Self-image.

Note. Postsecondary educational attainment levels: 1 = none, 2 = less than two years, 3 = more than two years but no baccalaureate, and 4 = four or more years with receipt of a baccalaureate.

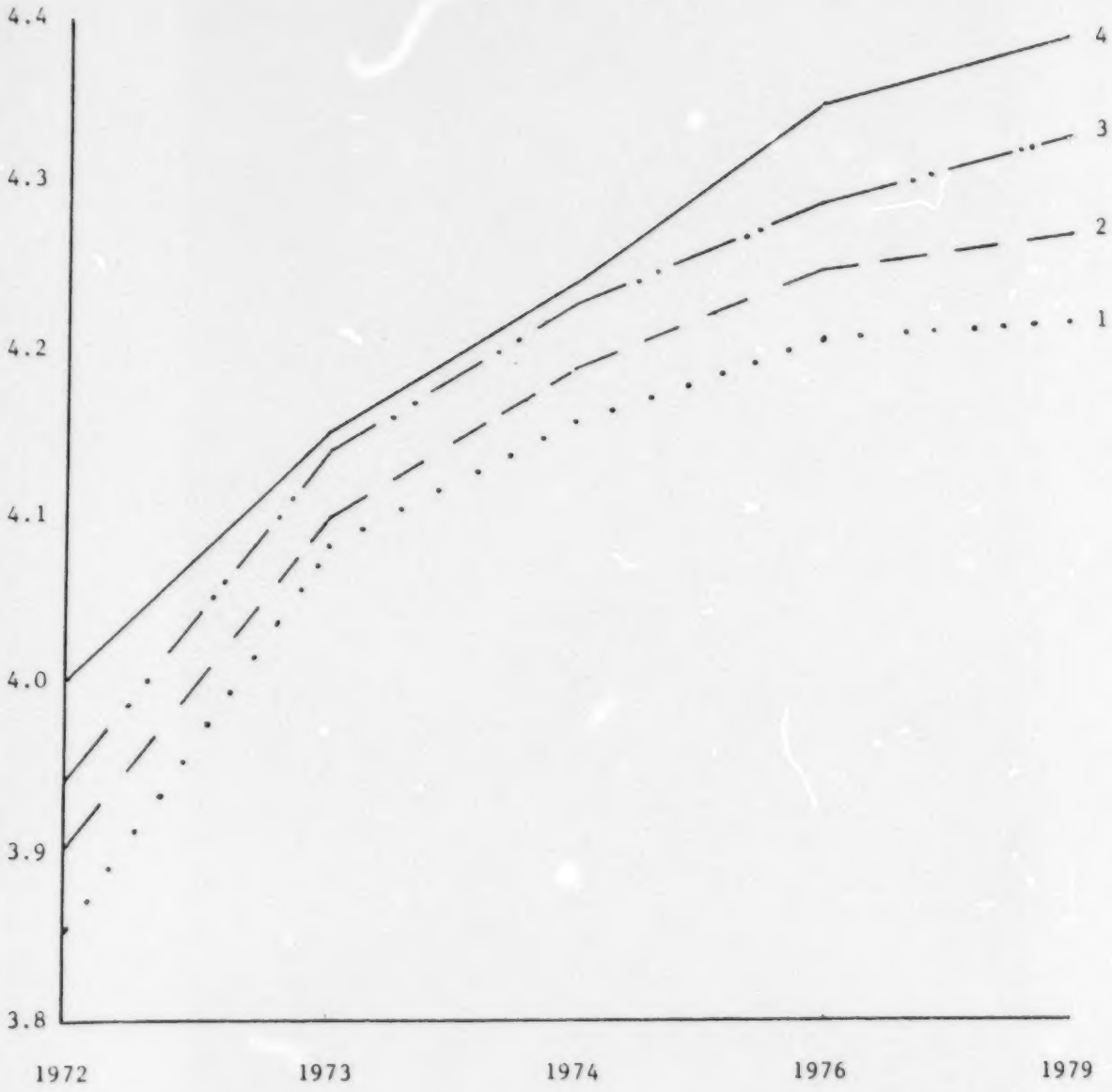

4.4
4.3
4.2
4.1
4.0
3.9
3.8
1972
1973
1974
1976
1979
4
3
2
1

FIGURE 2

Figure 2. Interaction between Time and Postsecondary Educational Attainment on Self-confidence.

Note. Postsecondary educational attainment levels: 1 = none, 2 = less than two years, 3 = more than two years but no baccalaureate, and 4 = four or more years with receipt of a baccalaureate.

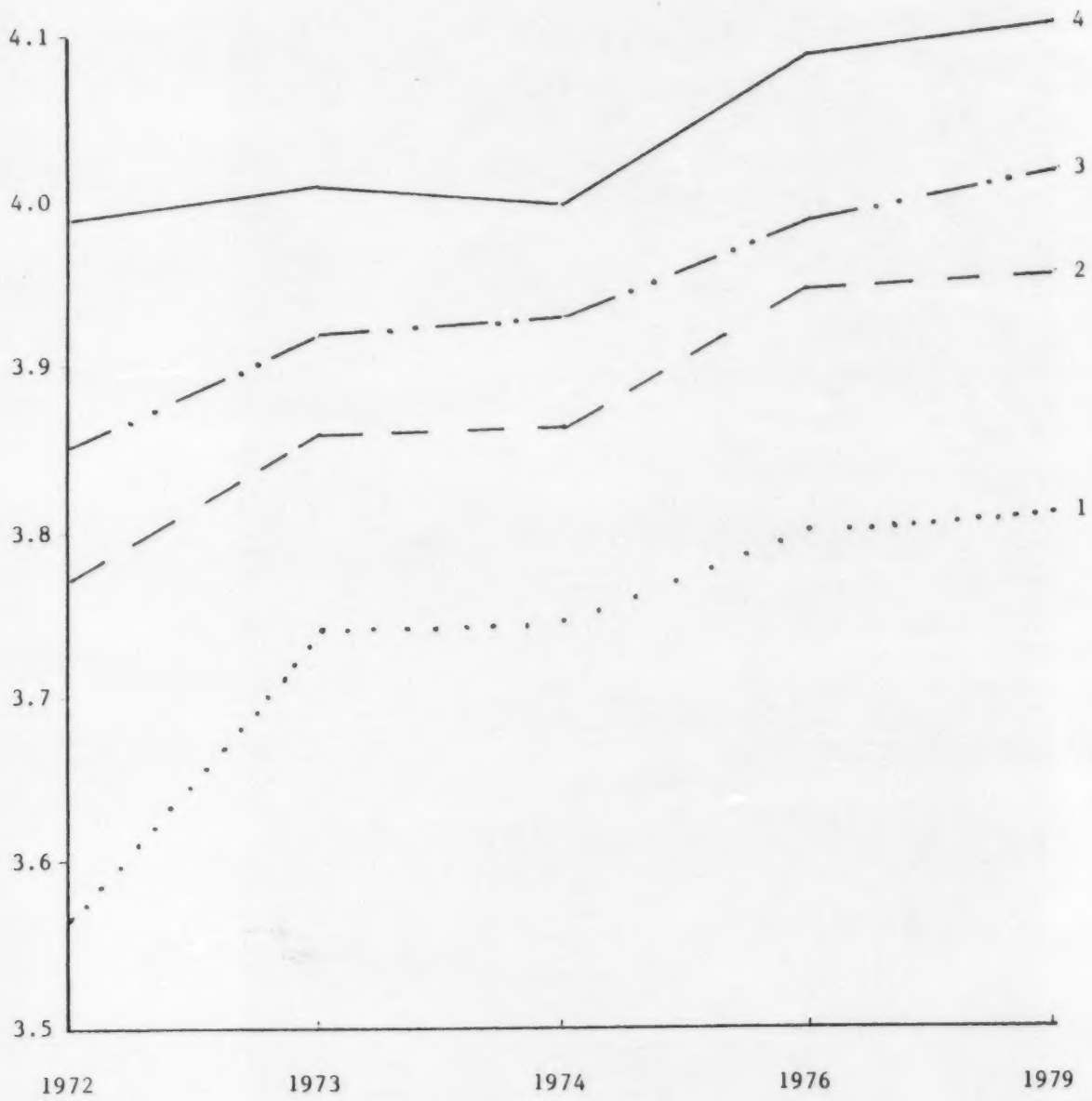
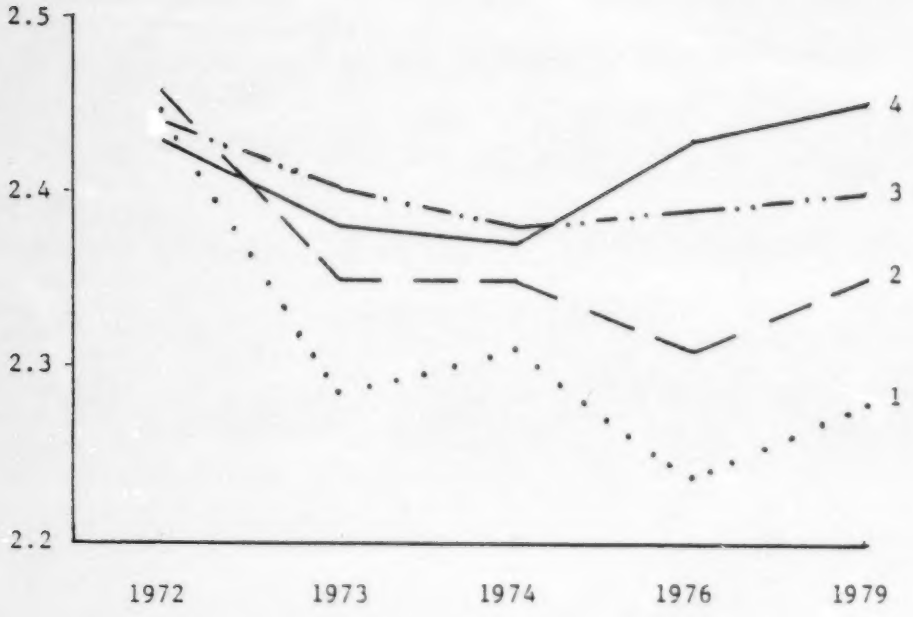

4.1
4.0
3.9
3.8
3.7
3.6
3.5
1972
1973
1974
1976
1979
4
3
2
1

FIGURE 3

Figure 3. Interaction among Sex, Time, and Postsecondary Educational Attainment on Career Orientation.

Note. Postsecondary educational attainment levels: 1 = none, 2 = less than two years, 3 = more than two years but no baccalaureate, and 4 = four or more years with receipt of a baccalaureate.

Females



Males